What is claimed is:

1. A motor control system which controls a motor having a motor rotor formed with magnetic poles of a predetermined number of poles, and an electromagnet which is disposed around the motor rotor and on which a motor winding is wound, comprising:

rotation angle detecting means for detecting a rotation angle of the motor rotor;

current supplying means for supplying an electric current of predetermined phase number according to the detected rotation angle to the motor winding; and

correcting means for correcting the electric current supplied to the motor winding by said current supplying means using a correction current value corresponding to the rotation angle of the motor rotor, which compensates a difference between torque generated by the motor rotor and a theoretical value of the torque.

2. The motor control system according to claim 1, wherein a plurality of the electromagnets are present for each phase;

the electromagnets are supplied with the electric current independently from said current supplying means; and

said correcting means corrects the electric current for each of the electromagnets.

3. The motor control system according to claim 1, wherein said correcting means adds the correction current value corresponding to the detected rotation angle to the

electric current.

4. The motor control system according to claim 2, wherein said correcting means adds the correction current value corresponding to the detected rotation angle to the electric current.

5. The motor control system according to claim 1, further comprising:

storage means for storing the correction current value corresponding to the rotation angle of the motor rotor,

wherein said correcting means acquires the correction current value corresponding to the detected rotation angle from said storage means and adds the acquired correction current value to the electric current.

6. The motor control system according to claim 2, further comprising:

storage means for storing the correction current value corresponding to the rotation angle of the motor rotor,

wherein said correcting means acquires the correction current value corresponding to the detected rotation angle from said storage means and adds the acquired correction current value to the electric current.

7. The motor control system according to claim 3, further comprising:

storage means for storing the correction current value corresponding to the rotation angle of the motor rotor,

wherein said correcting means acquires the correction current value corresponding to the detected rotation angle

from said storage means and adds the acquired correction current value to the electric current.

8. The motor control system according to claim 4, further comprising:

storage means for storing the correction current value corresponding to the rotation angle of the motor rotor,

wherein said correcting means acquires the correction current value corresponding to the detected rotation angle from said storage means and adds the acquired correction current value to the electric current.

9. The motor control system according to claim 1, further comprising:

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase; and

correction current value calculating means for calculating the correction current value corresponding to the rotation angle of the motor rotor of each phase,

wherein said correction current value calculating means calculates the correction current value using the acquired induced voltage.

10. The motor control system according to claim 2, further comprising:

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase; and

correction current value calculating means for calculating the correction current value corresponding to the rotation angle of the motor rotor of each phase,

wherein said correction current value calculating means calculates the correction current value using the acquired induced voltage.

11. The motor control system according to claim 3, further comprising:

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase; and

correction current value calculating means for calculating the correction current value corresponding to the rotation angle of the motor rotor of each phase,

wherein said correction current value calculating means calculates the correction current value using the acquired induced voltage.

12. The motor control system according to claim 4, further comprising:

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase; and

correction current value calculating means for calculating the correction current value corresponding to the rotation angle of the motor rotor of each phase,

wherein said correction current value calculating means calculates the correction current value using the acquired induced voltage.

13. The motor control system according to claim 5, further comprising:

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase; and

correction current value calculating means for calculating the correction current value corresponding to the rotation angle of the motor rotor of each phase,

wherein said correction current value calculating means calculates the correction current value using the acquired induced voltage.

14. The motor control system according to claim 9, further comprising:

angular velocity acquiring means for acquiring an angular velocity of the motor rotor,

wherein said correction current value calculating means calculates the correction current value Cn of the n-th phase by a formula of $Cn = -En \cdot In/(Fn+En)$, where

n is an integer value from 0 to N-1 for the electric current of N phase, where N is an integer of 2 or more;

En is a value calculated by a formula of $En = Vn/\omega - Fn$, where ω is the angular velocity acquired by said angular velocity acquiring means, Vn is the induced voltage of each phase n acquired by said induced voltage acquiring means, and Fn is a theoretical value of an induced voltage constant of each phase n corresponding to the rotation angle of the motor rotor; and

In is the electric current value of each phase n corresponding to the rotation angle of the motor rotor.

15. The motor control system according to claim 12, further comprising:

angular velocity acquiring means for acquiring an

angular velocity of the motor rotor,

wherein said correction current value calculating means calculates the correction current value Cn of the n-th phase by a formula of $Cn = -En \cdot In/(Fn+En)$, where

n is an integer value from 0 to N-1 for the electric current of N phase, where N is an integer of 2 or more;

En is a value calculated by a formula of $En = Vn/\omega - Fn$, where ω is the angular velocity acquired by said angular velocity acquiring means, Vn is the induced voltage of each phase n acquired by said induced voltage acquiring means, and Fn is a theoretical value of an induced voltage constant of each phase n corresponding to the rotation angle of the motor rotor; and

In is the electric current value of each phase n corresponding to the rotation angle of the motor rotor.

16. A motor apparatus comprising:

a motor rotor formed with magnetic poles of a predetermined number of poles;

an electromagnet which is disposed around said motor rotor and on which a motor winding is wound; and

the motor control system according to claim 1 for supplying an electric current of predetermined phase number to said motor winding.

17. A vacuum pump comprising:

a housing having a cylindrical shape;

a pump stator provided at the inner periphery of said housing;

a rotating shaft pivotally supported so as to be rotatable relatively to said housing and said pump stator;

a pump rotor to which said rotating shaft is fixedly provided and which is provided on the inner periphery side of said pump stator; and

the motor apparatus according to claim 16 for rotating said pump rotor.

18. A correction current value measuring apparatus for acquiring a correction current value for correcting an electric current of predetermined phase number supplied to a motor having a motor rotor formed with magnetic poles of a predetermined number of poles, and an electromagnet which is disposed around the motor rotor and on which a motor winding is wound, comprising:

rotation angle detecting means for detecting a rotation angle of the motor rotor;

induced voltage acquiring means for acquiring an induced voltage of the motor winding of each phase so as to correspond to the detected rotation angle;

correction current value calculating means for calculating a correction current value corresponding to the rotation angle of the motor rotor, which compensates a difference between torque generated by the motor rotor and a theoretical value of said torque, using the acquired induced voltage; and

output means for outputting the calculated correction current value.

19. The correction current value measuring apparatus according to claim 18, further comprising:

angular velocity acquiring means for acquiring the angular velocity of the motor rotor,

wherein said correction current value calculating means calculates the correction current value Cn of the n-th phase by a formula of $Cn = -En \cdot In/(Fn+En)$, where

n is an integer value from 0 to N-1 for the electric current of N phase, where N is an integer of 2 or more;

En is a value calculated by a formula of $En = Vn/\omega-Fn$, where ω is the angular velocity acquired by said angular velocity acquiring means, Vn is the induced voltage of each phase n acquired by said induced voltage acquiring means, and Fn is a theoretical value of an induced voltage constant of each phase n corresponding to the rotation angle of the motor rotor; and

In is the electric current value of each phase n corresponding to the rotation angle of the motor rotor.

20. A motor control method for controlling a motor having a motor rotor formed with magnetic poles of a predetermined number of poles, and an electromagnet which is disposed around the motor rotor and on which a motor winding is wound, comprising, in a motor control system having rotation angle detecting means, current supplying means, and correcting means:

a rotation angle detecting step of detecting a rotation angle of the motor rotor by using the rotation angle

detecting means;

a current supplying step of supplying an electric current of predetermined phase number according to the detected rotation angle to the motor winding by using the current supplying means; and

a correcting step of correcting the electric current supplied to the motor winding by the current supplying means using a correction current value corresponding to the rotation angle of the motor rotor, which compensates a difference between torque generated by the motor rotor and a theoretical value of the torque, by using the correcting means.